

REMARKS

The specification has been amended to make editorial changes to place the application in condition for allowance at the time of the next Official Action.

A proposed drawing correction is submitted for Figure 9 denoting the annular channel disclosed on page 8, line 17.

Claims 4-11 were previously pending in the application. New claims 26-34 are added. Therefore, claims 4-11 and 26-34 are presented for consideration.

The claims are amended to positively recite the combination of the filter canister and the paper roll filter media. Accordingly, the 35 USC §112, second paragraph rejections set forth in the Official Action are believed addressed.

Claims 4 and 7-10 are rejected as anticipated by BEACH et al. 5,171,430.

Reconsideration and withdrawal of the rejection are respectfully requested because the reference does not disclose or suggest a paper roll having a marginally greater diameter than an internal diameter of the canister prior to insertion into the canister, where the canister is sufficiently rigid and the paper roll is sufficiently tightly wound so that the paper roll, when inserted into the canister using a press, is substantially compressed to the internal diameter of the canister without distortion of the canister, as recited in claim 4.

By way of example, Figure 11 of the present application shows paper roll 47 being inserted into canister 23. As seen by the compression of the paper roll at the chamfered open end, the paper roll has a marginally greater diameter than the internal diameter of the canister prior to insertion into the canister. As seen in Figure 13 of the present application, the canister 23 is sufficiently rigid and the paper roll is sufficiently tightly wound that the paper roll, when inserted into the canister using a press, is substantially compressed to the internal diameter of the canister without distortion of the canister. Specifically, the paper roll contacts the inner surface of the canister without distorting the canister.

As seen in Figure 1 of BEACH et al., for example, the filter media 30 of BEACH et al. is not contacting the inner surface of the canister 10. Accordingly, at no time is the diameter of the paper roll greater than the internal diameter of the canister and therefore the paper roll could not be of marginally greater diameter than the internal diameter of the canister prior to insertion into the canister as recited in claim 4 of the present application.

Column 2, lines 64-66 of BEACH et al. disclose that the filter medium 30 is supported in a cantilever fashion by a plate 38. In order to be supported in a cantilever fashion, the filter medium 30 must be spaced from the inner surface. Therefore, BEACH et al. do not disclose or suggest that the paper roll, when

inserted into the canister, is substantially compressed to the internal diameter of the canister without distortion of the canister as recited in claim 4 of the present application.

Claim 4 further recites spaced anti-tracking ribs projecting from the inner surface of the side wall. As known to those of ordinary skill in the art, tracking is the process whereby oil bypasses the filter by flowing longitudinally along the inner surface of the canister. Accordingly, anti-tracking ribs prevent oil bypassing the filter along the longitudinal inner surface of the canister.

The Official Action has indicated two elements as anti-tracking ribs. However, this assertion is not supported by the reference. Specifically, element 24 is disclosed on column 2, line 54 as an annular recess. Such element is a single circumferential rib that would not inhibit oil flow along the inner surface of the canister. Element 26 is disclosed on column 2, lines 54-56 of BEACH et al. as a plurality of axially directed ribs 26 adjacent the lower wall 28 of Section 14. Since these ribs are axial, they would promote tracking, not be anti-tracking ribs as recited in claim 4 of the present application. As the reference does not disclose that which is recited, the anticipation rejection is not viable. Reconsideration and withdrawal of the rejection are respectfully requested.

Dependent claims 7-10 also include features not disclosed in the reference. For example, claim 7 recites that

the side wall has a slight taper on the inner surface to enable release from a male mould. As seen in Figure 1 of BEACH et al., the upper surface near 46 is tapered inward which would hinder release from a male mould. Claim 9 recites that the base is inwardly biased. As readily recognized by one of ordinary skill in the art, inwardly biased would be inwardly facing the void of the canister. Lower wall 28 of BEACH et al. is curved outwardly or outwardly biased. Claim 10 recites that the base is inwardly dished to provide a bias against loading as the paper roll filter media is pressed into the canister. Since the paper roll filter media of BEACH et al. does not contact the base, the base would not provide a bias against the paper roll filter media. None of these features are disclosed in the reference and thus these claims are believed patentable regardless of the patentability of the claims from which they depend.

Claims 5 and 6 are rejected as unpatentable over BEACH et al. This rejection is respectfully traversed.

Claims 5 and 6 depend from claim 4 and further define the invention. As set forth above, BEACH et al. do not disclose or suggest what is recited in claim 4. Accordingly, claims 5 and 6 are also believed patentable over BEACH et al.

Claim 11 is rejected as unpatentable over BEACH et al. in view of PRICE 4,109,676. This rejection is respectfully traversed.

PRICE is only cited for the teaching of a base having radially extending flow passages separated by lands. PRICE does not teach or suggest what is recited in claim 4. As set forth above, BEACH et al. do not disclose what is recited in claim 4. Since claim 11 depends from claim 4 and further defines the invention, the combination of references would not render obvious claim 11.

New claims 26-28 depend from claim 4 and further define the invention and are also believed patentable over the cited prior art.

New claim 29 recites a paper roll filter media having a first diameter greater than an internal diameter of the canister when the paper roll filter media is outside the canister and a second diameter substantially the same as the internal diameter of the canister so that the paper roll filter media contacts the inner surface between an adjacent two of the plural axially spaced anti-tracking ribs without distortion of the canister when the paper roll filter media is inserted into the canister. The comments above regarding claim 4 are equally applicable to claim 29.

In addition, claim 29 recites that the inner surface has plural axially spaced anti-tracking ribs projecting radially inward and that a generatrix defining the outer surface is a straight line. As seen in Figure 13 of the present application, the inner surface has plural axially spaced anti-tracking ribs

projecting radially inward. A generatrix defining the outer surface is a straight line. Specifically, the cylinder is a continuous cylinder and does not have an annular recess similar to the annular recess 24 in BEACH et al.

Claims 30-34 depend from claim 29 and further define the invention and are also believed patentable over the cited prior art. In addition, claim 32 recites that the base has an axially extending annular projection defining an annular channel in the base. Claim 33 recites that the inner surface comprises an annular outward chamfer at the open end. None of these features are disclosed in the references and thus these claims are believed patentable regardless of the patentability of claim 29 from which they depend.

Accordingly, it is believed that the new claims avoid the rejections under §102 and §103 and are allowable over the art of record.

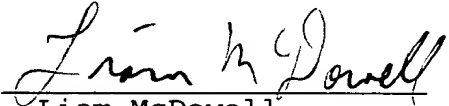
In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

WINTER et al. S.N. 09/868,333

Attached hereto is a marked-up version showing the changes made to the specification and claims. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

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"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

IN THE SPECIFICATION:

Page 8, the paragraph, beginning on line 4, has been amended as follows:

--A typical container formed using the apparatus of Figure 1 is illustrated in Figures 5 to 9. The container is a generally cylindrical canister having a side wall 24, the side wall having an outer surface 25 and an inner surface 26, the canister being used as a filter element holding a paper roll as filter media, the canister has a thin side wall and includes spaced anti-tracking ribs 27 that project in this case 1.5 millimetres into the interior of the container. The base 28 is inwardly dished at 29 and also includes a curved seat 30 for a sealing washer, a single aperture 31 being provided for a return tube for returning the filtrate from the filter to the main oil or fuel circuit. The base is externally ribbed with strengthening ribs 32 while the interior of the base includes radial flow passages 33 separated by lands 34. As can be seen there are in this embodiment 18 flow passages 33 and an annular projection 35. The annular projection 35 also serves an anti-tracking purpose in so far as any small amounts of oil that begin to track down the sides of the container become trapped in the annular channel [36] 63 around the base 28 of the canister. The container 23 includes a flared marginal edge region at 36 and an

outward chamfer at 37 which operates as a lead in for the paper roll into the canister 23.--;

the paragraph, beginning on line 23, has been amended as follows:

--Assembly of a filter element is illustrated in Figure 11. The diameters illustrated with the arrows 45 and 46 are approximately the same with the paper roll 47 comprising approximately 43 metres of paper wound into a tight 110 millimetre to 114 millimetre diameter roll on a cardboard core 48.--.

the paragraph, beginning on line 27, has been amended as follows:

--A layer of gauze 49 is placed in the base of the canister 23, the paper is initially pushed into position by hand as illustrated in Figure [11] 10 and then the guiding platen 42 is placed down onto the paper roll, activation of the hydraulic cylinder assembly causes the paper roll to be pushed into the canister 23.--.

Page 9, the paragraph, beginning on line 9, has been amended as follows:

--The last drawing illustrates application of the present invention to a fuel filter element 56 which can be made using the apparatus of Figure 1 simply by adjusting the thickness of the base to be very thin so that the base can be removed making an open ended tube. Fuel to be filtered flows into the

tube from both ends. Two half size paper rolls 57, 58 are inserted with a return flow path provided by an intermediate gauze 59. A return tube 60 is located in the central core as in the previous embodiment.--.

IN THE CLAIMS:

Claim 4 has been amended as follows:

--4. (amended) A filter element comprising:

a rigid injection moulded generally cylindrical canister formed about a male mould member, the canister having an internal diameter, an open end and a thin side wall, the side wall having an outer surface and an inner surface[, the canister being used as a filter element holding]; and

a paper roll as filter media,

[the canister having a thin side wall and there being] wherein spaced anti-tracking ribs [projecting] project from the inner surface of the side wall [and projecting] a distance sufficient to enable the canister to be removed from the male mould member during a moulding process and while still sufficiently flexible,

the paper roll [being of] has a marginally greater diameter than the internal diameter of the canister prior to insertion into the canister, and

the canister [being] is sufficiently rigid and the paper roll [being] is sufficiently tightly wound that the paper roll, when inserted into the canister using a press, is

substantially compressed to the internal [dimension] diameter of the canister without distortion of the canister.--

Claim 7 has been amended as follows:

--7. (amended) The canister according to claim 4 wherein the ribs are evenly spaced, the [inner] side wall having slight taper on the inner surface to enable release from the male mould.--

Claim 10 has been amended as follows:

--10. (amended) The canister according to claim 4 including a base and wherein the base is inwardly dished [at the centre relative to the edges] in order to provide a bias against loading as [a] the paper roll filter media is being pressed into the canister.--

Claim 11 has been amended as follows:

--11. (amended) The canister according to claim 4 including a base and wherein the base has an inner surface with radially extending flow passages separated by lands, the lands defining a supporting surface to evenly distribute and support the paper roll filter media across the base of the canister to provide secondary flow passages across the base of the canister.--